

6720-052 and 552 June 2018

**6720-37 Advanced Technical Extended Diploma in
Constructing the Built Environment (Construction) (1080)**

1	Name two components of a gas supply system that should be installed in a box fixed to the external wall of a building.		
	Acceptable answer(s)	Guidance	Max marks
	<ul style="list-style-type: none"> On/off shut-off lever (1) Gas meter (1) 	n/a	2

2a)	Differentiate between surface water and foul water?		
	Acceptable answer(s)	Guidance	Max marks
	Surface water is collected from roofs and paved areas (1) whereas foul water contains domestic or trade waste from inside buildings (1).	n/a	2
2b)	Describe what happens to surface water when removed from a plot of land?		
	Acceptable answer(s)	Guidance	Max marks
	<p>Two marks from the following:</p> <p>Surface water is considered clean and can therefore be discharged directly to an approved watercourse or soakaway (1). In some instances the surface water will be discharged through a combined system (1) and will ultimately be discharged into water treatment facility along with the foul water (1).</p>	n/a	2

3	Name the point at which the responsibility for a cold water supply changes from the water authority to the consumer.		
	Acceptable answer(s)	Guidance	Max marks
	The responsibility changes at a point in the mains supply just after the external stop valve (1). Water authority outside of that, consumer inside (1).	n/a	2

4	Explain why an indirect hot water system requires two storage cisterns when a direct system only needs one.		
	Acceptable answer(s)	Guidance	Max marks
	Marks as shown below. In a direct cold water system there is only one circuit and the same water is heated, stored and drawn off (1), hence one cistern is all that is needed (1). In an indirect system there is a primary circuit that is heated directly and a secondary circuit that is heated by the primary circuit (1). Each needs its own supply of cold water, so two cisterns are needed. (1)	n/a	4

5	Explain how rain water can be captured and used in domestic properties.		
	Acceptable answer(s)	Guidance	Max marks
	Rainwater falls onto the roof and is led into rainwater harvesting tanks rather than surface water drains (1). This is plumbed into existing house pipework/plumbing (1). Flushing toilets, cleaning cars, watering the garden and washing clothes (any for one mark).	n/a	3

6	Explain why metal-faced switches should not be used when extending an existing radial lighting system that is wired using only two-core cable.		
	Acceptable answer(s)	Guidance	Max marks
	Because the use of a two core cable means that the circuit is unearthed (1) and such circuits should not be extended (1) unless they use only plastic-faced switches to prevent electrical shock.(1)	n/a	3

7	State two defects associated with structural movement of a building.		
	Acceptable answer(s)	Guidance	Max marks
	Any two from the list below at one mark each. <ul style="list-style-type: none"> • Cracking of walls (eg brickwork/plaster) max one mark. • Bowing of walls. • Floors out of alignment. • Door frames twisted. • Movement along the bed joints and features eg cills. 	n/a	2

8	Describe why it is important to have a planned maintenance programme.		
	Acceptable answer(s)	Guidance	Max marks
	The main reasons why include; it keeps the property in optimum condition (1), allows work items to be scheduled (1) and costs spread out (1), it reduces running (1) and maintenance (1) costs over the life span of the building. Increases the lifespan of the building (1).	The answer needs to be a description and a list will be limited to one mark max.	3

9	Outline the three main stages when tendering for a conversion project.		
	Acceptable answer(s)	Guidance	Max marks
	<ul style="list-style-type: none"> • The contract documents are sent to the contractors (1). • Contractors price the works (1). • The contractor is appointed and contracts signed (1). 	n/a	3

10	Summarise the requirements of the Party Wall etc Act for a conversion project which requires structural alterations on and adjacent to the party wall.		
	Acceptable answer(s)	Guidance	Max marks
	A coherent summary that describes the requirements and does not list them. Responses must relate specifically to the scenario given. The discussion will include some or all the following for one mark each to a maximum of five marks.	If candidates simply list the process then a max of two marks will be awarded for a comprehensive list	5

	<p>Any work on or adjacent to a Party wall, structure or boundary (fence) may be subject to the requirements of the Party Wall etc Act (1). If the works materially alter the wall then a Party Wall Award is required (1). This is prepared by surveyors acting for the person the work is being undertaken for (Building Owner) (1) and the neighbour(s) (Adjoining Owner) (1). The award will stipulate the specific requirements of the Act and will serve to protect the structural stability of the wall/structure/boundary (1). A detailed record (Schedule of Condition) will be prepared (1) and along with the proposed work details will be appended to the award (1). The surveyors acting for the BO and AO will agree both the condition, and the works relative to the wall (1). The principal aim is to ensure that the new works do not impact on the wall in any way (1). During the works the BO and AO surveyors will monitor the works in relation to the wall (1) and both will inspect and sign off on completion (1).</p>		
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11	Explain why certain building services tasks within the construction phase of a conversion project must be undertaken by a suitably qualified person.		
	Acceptable answer(s)	Guidance	Max marks
	<p>A coherent explanation that highlights that:</p> <p>All works to Gas and Electrical (1) installations must be carried out by a trained, certified and competent individual.</p> <p>Both gas and electrical installation are highly dangerous and failure to install correctly can lead to personal injury and damage to the property (1). Both trades are carefully regulated and certificates of completion are required at the end of a project (1). Building control will request copies of all certificates before they sign off on a project (1).</p>	<p>Gas and Electric alone would get one mark. There needs to be a discussion as to why it is important and consideration of the need for certification by a qualified and competent person.</p>	3

12	Explain the implications of poor workmanship on the long-term condition of a building.		
	Acceptable answer(s)	Guidance	Max marks
	<p>A coherent linked description that highlights the main issues caused by poor workmanship. These include (one mark each as part of a linked explanation):</p> <ul style="list-style-type: none"> • Faster wear and tear of the fabric. • Increased maintenance cost. 	<p>If candidates simply produce a list the maximum awarded will be one mark.</p>	2

	<ul style="list-style-type: none"> • Exacerbated failure of service components. • Reduced efficiency in the running costs. • Shorter life span for components. • Potential non-compliance with legislation. • Increased potential of obsolescence. 		
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13	State two types of work a residential building surveyor may survey for legal purposes.		
	Acceptable answer(s)	Guidance	Max marks
	Any two for one mark each from: <ul style="list-style-type: none"> • Party wall. • Boundary dispute. • House disposal (sale) / acquisition (purchase) (one mark max). • Right to light. • Expert witness. 	n/a	2

14a)	State what is meant by the acronym 'RICS'?		
	Acceptable answer(s)	Guidance	Max marks
	Royal Institution of Chartered Surveyors.	n/a	1
14b)	State what is the role of the RICS?		
	Acceptable answer(s)	Guidance	Max marks
	The professional/governing body for surveyors who set and manage professional standards.	n/a	1

15	Explain the role of a building surveyor in a refurbishment project for an office building.		
	Acceptable answer(s)	Guidance	Max marks
	<p>A coherent linked explanation that highlights how the building surveyor could be involved in the following way: Inception – design ideas (1), budget planning (1).</p> <ul style="list-style-type: none"> • Design – survey of building (1), production of drawings (1), production of specification (1). • Legal – dealing with H&S (1), planning and building control (1). • Contract administration – acting as contract administrator (1). • Project management of the works (1). 	The candidate must produce a coherent and linked discussion explain each of the above aspects of their involvement. A simple list will gain a maximum of three marks.	5

16	State two different ways in which a surveyor can reduce the health and safety risk when working at height.		
	Acceptable answer(s)	Guidance	Max marks
	<p>Any two, max one mark each from:</p> <ul style="list-style-type: none"> • Wear appropriate PPE. • Do not work off ladders. • Use alternative methods of surveying eg drones and pole cameras. • Use mansafe systems where provided. • Do not work alone. • Undertake dynamic risk assessments. 	The answers must be two different considerations. For example, wear a harness and wear a hard hat are both in the category of PPE so would achieve one mark.	2

17	State two sources of evidence a surveyor would obtain from a site visit for an insurance reinstatement survey.		
	Acceptable answer(s)	Guidance	Max marks
	<p>Any two for one mark each from:</p> <ul style="list-style-type: none"> • Size of the building. • Methods of construction. • Details of the surrounding area. • Information relating to the neighbouring properties. • Site wide restrictions or issues. • Photographs 	n/a	2

18	Explain the safety measures a building surveyor should undertake off site, prior to commencing a site inspection for a survey.		
	Acceptable answer(s)	Guidance	Max marks
	<p>A coherent linked explanation that considers the pre-survey protocol. This will include:</p> <p>Measures: max three marks: Speaking to the client to (1), check the planning portal to obtain details of any previous works (1), find out the age of the property (1), ascertain where possible the methods of construction (1), obtain any existing asbestos surveys (1), review any historic survey reports (1), view the property via in-line mapping systems (1), speak to neighbours (1) speak to contractors who may have worked on the building historically (1).</p> <p>Why: max two marks: Ascertain any known hazards, right equipment, avoid asbestos, identify if colleague is required.</p>	n/a	5

19	Name two historical events that prompted significant development and change to Building Regulations.		
	Acceptable answer(s)	Guidance	Max marks
	<p>Any two for one mark each from the list below.</p> <ul style="list-style-type: none"> • Great Fire of London. • Plague. • Cholera outbreaks. • Industrial Revolution. • World War II. • Ronan Point explosion. • Climate change. 	n/a	2

20	State three categories listed in the current Building Act that the Building Regulations are designed to satisfy.		
	Acceptable answer(s)	Guidance	Max marks
	<p>Any three for one mark each from the list below.</p> <ul style="list-style-type: none"> • Health and safety of persons in and around building. • Conservation of fuel and power. • Preventing waste, undue consumption, misuse or contamination of water. 	n/a	3

	<ul style="list-style-type: none"> • Protection or enhancement of the environment. • Sustainable development. • Prevention or detection of crime. 		
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21	Outline how Approved Document E applies to a residential flat refurbishment.		
	Acceptable answer(s)	Guidance	Max marks
	<p>Max three marks:</p> <p>Approved Document E – Resistance to the passage of sound (1) is used to ensure that individual residential units do not transmit excessive sound to adjoining premises (1). It prescribes the minimum requirements (1) in terms of sound insulation (1). The main areas it covers are for floors (1) and separating walls (1) between individual residential units (1).</p>	n/a	3

22	Explain why Approved Document L will have increasing importance in the future.		
	Acceptable answer(s)	Guidance	Max marks
	<p>A coherent explanation that considers the reasons why.</p> <p>Max two marks for aspects of Part L: Approved Document L is the Conservation of Fuel and Power (1). It stipulates the minimum requirements for achieving compliance with the Build Regulations (1) and considers issues such as insulations (1) modern methods of construction (1) energy producing appliances (1) alternative energy sources (1).</p> <p>Max two marks for why: The UK Government have stated that through control of the Building Regulations and the reduction of energy consumption in the construction (1) and use of all buildings the country will be able to meet their commitment to climate change (1). Primarily concerned with the reduction in energy consumption for all new and refurbished buildings. (1). Approved Document L is a key part in the UK strategy for dealing with climate change (1).</p>	n/a	4

23	Describe how a developer should satisfy the minimum requirements for sanitary conveniences and washing facilities to ensure Building Regulations compliance.		
	Acceptable answer(s)	Guidance	Max marks
	<p>A coherent linked discussion that details the requirements of the App Docs to meet the minimum requirements.</p> <p>Requirements (max two marks): Sanitary Conveniences and washing facilities are covered in App Doc G (1). They stipulate, adequate and suitable sanitary conveniences must be provided in rooms provided to accommodate them or in bathrooms (1). Adequate hand washing facilities must be provided in rooms containing sanitary conveniences; (1) or rooms or spaces adjacent to rooms containing sanitary conveniences (1). Any room containing a sanitary convenience, a bidet, or any facility for washing hands provided in accordance with paragraph, must be separated from any kitchen or any area where food is prepared (1).</p> <p>Why: max one mark: Ensure hygiene, ensure consistent supply of services, prevent smells, prevents the spread of disease.</p>	n/a	3

24	Explain the impact the Public Health Act has on the construction and built environment sector.		
	Acceptable answer(s)	Guidance	Max marks
	<p>A coherent linked explanation that highlights the impact on the industry.</p> <p>The Act combined many existing Acts into one document with the primary aim to improve the health and well-being of the population (1).</p> <p>The impact on the construction industry was significant because to show compliance new infrastructure had to be put in place. This include new drainages and sewerage systems (1), new supply systems for clean (1), and new water housing based on new town planning ideas (1) which included footpaths (1) street lighting (1) increased space between houses and streets (1) and house that restricted the passage of fire (1) and were structurally stable (1).</p>	Max three marks for a linked discussion, max one mark for a list.	3

	This led to the Building Act of 1878 (1) provided more detail with constructions: it defined foundations, damp proof courses, thickness of walls, ceiling heights, space between dwellings, under floor ventilation, ventilation of rooms and size of windows.		
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25	<p>Your client has purchased a large double fronted Georgian town house (circa 1900) in a central location of a busy town. The property is traditionally constructed with solid brick walls, slate covered timber trussed roof and single glazed box sash windows.</p> <p>The property was last used as offices and is in a poor state of repair. Several of the original doors have been removed, the roof has slipped with missing slates and the windows have extensive wet rot. There is no thermal insulation and there are damp issues in the rear ground floor offices. The services are old but functional, however the cold-water provision is through lead pipes.</p> <p>Your client wants to convert the property back to a single dwelling which they intend to live in. The property is not listed, but is located in a conservation area. You have been asked to advise on:</p> <ul style="list-style-type: none"> • The role of a building surveyor in the refurbishment project. • Measures needed to comply with the Building Regulations. • Installation of new plumbing and drainage services. • Maintenance considerations once the property is refurbished. 		
25a)	Explain why there is a need to refurbish older buildings.		
	Acceptable answer(s)	Guidance	Max marks
	<p>Explanation that considers some of the following points, to a maximum of three marks:</p> <p>Lack of land (1), societal changes (1), brownfield use (1), individual needs (1), fashion (1), preservation of old buildings (1), changes to meet legislative changes (1).</p>	n/a	3
25b)	Discuss the main considerations in respect of the client's specific request.		
	Acceptable answer(s)	Guidance	Max marks
	<p>Intention: <i>The aim of this question is for candidates to demonstrate their knowledge of and understanding of the role of the building surveyor in a refurbishment project. To show they understand the maintenance requirements for a property and how to apply legislative requirements to a conversion project to satisfy Building Regulations. In addition to this, the candidate will demonstrate their knowledge and understanding of the installation and requirements for a new plumbing and drainage installation for a refurbishment project.</i></p>	<p>Indicative content: Role of the building surveyor:</p> <ul style="list-style-type: none"> • Building survey, specifications, drawings, inspections. Project management, certification, contractual matters, payments, quality control. <p>Measures needed to comply with the Building Regulations:</p>	15

	<p>Mark Band 1 (1-5 marks) The learner identifies a limited number of the key considerations, with limited discussion to support them. There is limited reference to the role of the building surveyor in a refurbishment project and limited consideration of the maintenance and requirements and application of the building regulations and plumbing services installations. The response lacks accuracy and detail and makes a limited reference to the scenario. To access higher marks, the response must be clearly linked to the scenario.</p> <p>Mark Band 2 (6-10 marks) The learner identifies a range of the key considerations, with a broad discussion to support them. The responses are detailed and make some reference to the scenario. To access higher marks, the response must have the tasks listed in a logical order.</p> <p>Mark Band 3 (11-15 marks) The learner identifies a comprehensive range of the key considerations with a detailed discussion to support them. The responses are detailed and makes clear links to the scenario. The learner demonstrates a thorough understanding of the main considerations and presents them in a linked and coherent manner. To access higher marks, the response must include reference to specific legislative requirements and contractual procedures.</p>	<ul style="list-style-type: none"> • Legislative needs, construction methods, building regulation compliance, approved documents, and application process. <p>Plumbing and Drainage:</p> <ul style="list-style-type: none"> • Drainage systems, waste water systems, connection to the mains, gas installations, gas safe legislation. <p>Maintenance considerations once the property is refurbished:</p> <ul style="list-style-type: none"> • Construction methods, maintenance requirements, maintenance options, schedules of maintenance and maintenance regimes. <p><i>For no awardable content, award 0 marks.</i></p>	
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